4. **Pemphigus mordvilkoi** Cholodkovsky

Pemphigus mordvilkoi Cholodkovsky, 1912. *Rev. Russ. Ent.*, 12 : 493. Ghosh, Chakrabarti and Bhattacharya, 1981. *Bull. Zool. Surv. India*, 4(3) : 320.

Material examined: 15 alate viviparous females and nymphs, INDIA: Himachal Pradesh, Simla, 21.ix.1987 from *Populus ciliata* (coll. D.K. Bhattacharya).

The species were obtained from stem galls of the host plant.

ACKNOWLEDGEMENT

I thank the Head, department of Zoology, University of Kalyani for laboratory facilities.

REFERENCES

BHALLA, O.P. (1971): Addition to the Aphid fauna of Himachal Pradesh. *Himachal J. agric. Res., 1:* 51-52.

BINDRA, O.S. & S.S. SEKHON (1969): Additional new records of aphids from Kangra, Kulu and Lahul Valleys (India). *Bull. Ent., 10(2):* 156-157.

CHAKRABARTI, S. & D.K. BHATTACHARYA (1982): New genera and species of aphids (Homoptera : Aphididae) from north-western Himalaya. *Annales Zoologici, 36(23):* 539-548.

CHAKRABARTI, S. & D.K. BHATTACHARYA (1985): Review of *Eumyzus* Shinji (Homoptera: Aphididae) with description of two new specis from Indian region. *Systematic Entomology, 10:* 387-393.

CHAKRABARTI, S., A.N. CHOWDHURI & D.N. RAYCHAUDHURI (1974): Further records of Aphids (Homoptera : Aphididae) from Himachal Pradesh, India. *Sci. Cult., 40:* 461-462.

CHAKRABARTI, S., A.K. GHOSH & A.N. CHOWDHURI (1970): Aphids (Homoptera) of Himachal Pradesh, India - III. *Oriental Insects, 4(4):* 447-452.

CHOWDHURI, A.N., R.C. BASU, S. CHAKRABARTI & D.N. RAYCHAUDHURI (1969): Aphids of Simla (Himachal Pradesh), India-I. *Oriental Insects, 3(1):* 83-92.

DAS, S.K., D. RAYCHAUDHURI & D.N. RAYCHAUDHURI (1981): Some new species and hitherto unknown morphs of aphids (Homoptera: Aphididae) from Himachal Pradesh, India. *Entomon, 6(1):* 47-56.

GHOSH, A.K., S. CHAKRABARTI, A.N. CHOWDHURI & D.N. RAYCHAUDHURI (1969): Aphids (Homoptera) of Himachal Pradesh, India-II. *Oriental Insects, 3(4):*327-334.

GHOSH, L.K. (1986): A conspectus of Aphidide (Homoptera) of Himachal Pradesh of North West Himalaya, India. Zoological Survey of India, Technical monograph, *16:*1-277.

MAITY, S.P., D.K. BHATTACHARYA & S. CHAKRABARTI (1982): Some new species of aphids (Homoptera : Aphididae) from Garhwal Himalaya, Uttar Pradesh, India. *Annales Zoologici, 36(26):*501-516.

RAYCHAUDHURI, D.N., L.K. GHOSH & S.K. DAS. (1980): Studies on the aphids (Homoptera : Aphididae) from North and North West India - I. *Ins. Matsum.*, n.s. *20:*1-42.

ON A NEW SPECIES OF *ZELOMORPHA* ASHMEAD (HYMENOPTERA : BRACONIDAE) FROM INDIA[1]

S.M. KURHADE[2] AND P.K. NIKAM[3]

(With three text-figures)

INTRODUCTION

Zelomorpha Ashmead is a small but widely distributed genus in the Nearctic, Ethiopian, Neotropical and Indo-Australian regions. Shenefelt (1970) recorded twelve species in the world fauna, of which four species are Oriental. According to Bhat and Gupta (1977) eighteen species are reported from the Oriental region, from which ten species are from India. In the present work, a new species, *Zelomorpha guptai* is

[1]Accepted September 1993.

[2]Post-graduate Dept. of Zoology, New Arts, Commerce and Science College, Ahmednagar 414 001.

[3]Department of Zoology, Marathwada University, Aurangabad, Maharashtra.

described on the material collected from India : Maharashtra : Ahmednagar, and key to the species groups and species of *Zelomorpha* by Bhat and Gupta (1977) is followed for the determination of new taxa.

Zelomorpha guptai sp. nov. is compared with *Z. punctator* (Roman) and *Z. fulginosa* (Cameron). The species *Z. punctator* is from Philippines and *Z. fulginosa* is from Meghalaya, India.

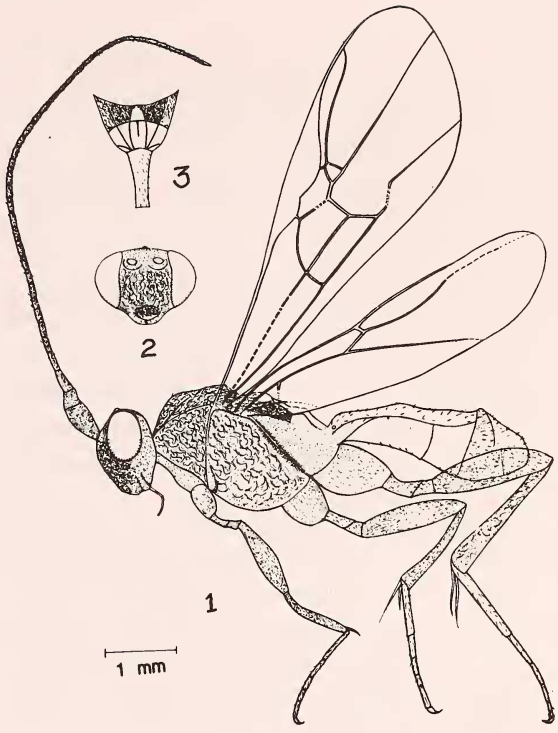
Types and other material of this species are in the collection of the junior author for the time being and will be deposited in the National Collection of the Zoological Survey of India, Calcutta, India.

Zelomorpha guptai sp. nov.

MALE: 6 mm in length (Fig. 1). Head (Fig. 2): 0.5 times as long as wide; vertex shiny, weakly punctate, more or less smooth, pubescent; interorbital distance 2.3 x as the ocello-orbital distance; ocelli in equilateral triangle; oceller region raised; frons depressed, bordered by marginal and frontal carina, very weakly punctate, pubescent; face 0.8 times as long as wide, rugosely, closely punctate, slightly elevated at mid apical region, pubescent; clypeus rugosely, closely punctate, pubescent, 2.3 x as long as the basal width of mandible; mandible bidentate, 3 x as long as its basal width; eye 2.7 x as long as wide, bare; occipital carina absent; temple weakly punctate, wth fine pubescence.

Antenna: 2 + 39 segmented; scape 1.5 x as long as wide; closely punctate, pubescent; pedicel 0.8 times as long as wide, closely pubescent; flagellum pubescent throughout the length; terminal segment 1.6 x as long as wide; penultimate segment as long as wide.

Thorax: pronotum shiny, rugosely, weakly punctate, pubescent; mesoscutum shiny, rugosely, sparsely punctate, pubescent; notauli distinct, compact and complete;



Figs. 1-3. *Zelomorpha guptai sp. nov. male*
1. Adult, lateral view; 2. Head, viewed from front;
3. Propodeum with first abdominal tergite.

scutellum shiny, rugosely, weakly punctate, pubescent; mesopleurum weakly rugoso-punctate, pubescent; mesopleural furrow distinct, extending the length of mesopleurum, moderately, transerversly carinated; metapleurum closely, moderately punctate; propodeum (Fig. 3) carinated, pubescent; areola triangular, 1.2 x as long as wide, smooth; basolateral area rugosely punctate, pubescent; petiolar area with an incomplete median longitudinal carinae. Hind coxa globular, shiny, sparsely punctate, pubescent; 1st trochanter 1.4 x as long as wide; 2nd trochanter as long as wide; femur 3.5 x as long as wide, rugosely, closely punctate, pubescent; tibia 1.2 x as long as femur, slender, rugosely, closely punctate, pubescent; tibial spur 0.45 times as long femur; basitarsus 1.5 x as long as tibial spur; all

tarsomeres spinose; second tarsomere 0.5 times as long as tibial spur; claw bifid.

Forewings: 3.8 x as long as broad; stigma 3.1 x as long as broad; metacarp 1.4 x as long as stigma; 1st abscissa of radius 0.3 times the breadth of stigma, equal to 2nd abscissa of radius; 3rd abscissa of radius 1.3 x as long as stigma; second cubital cell small, with four unequal sides; cubitus 2.5 x as long as stigma, running up to the margin; medius 0.7 times as long as costa; nervulus interstitial, 0.1 times as long as medius; anal cell 20 x as long as wide; margin with fine bristles.

Hind wings: 4.3 x as long as broad; nervellus reclivious, 0.5 times as long as submediella; vannal lobe slightly convex; mediella 2.3 x as long as nervellus; cubitella 1.2 x as long as subcostella; radiella not sclerotised throughout the length; margin with fine bristles.

Abdomen: 4.2 x as long as wide; first tergite longer than wide, 3.3 x as long as basal width, smooth, shiny, sparsely pubescent; second tergite 0.8 times as long as wide, smooth, shiny, weakly punctate, pubescent; suture between first and second, second and third tergite visible; third tergite concealed with remaining tergites, smooth, shiny, weakly punctate, pubescent.

Genitalia: Gonosquammae, gonoforceps and gonostipes with fine bristles; gonosquamma apically blunt and with distinct hair, equal to the length of aedeagus; gonoforceps convex; gonostipes wide basally; distivolsella straight; subgenital plate quadrate, thin, weakly sclerotised; anticosta thick; spiculum absent.

Coloration: Yellowish-red. Antenna, stigma blackish-brown; wings yellowish-brown, with apices light brown; veins yellowish and brownish in basal and apical region respectively.

FEMALE: Unknown.

Holotype: male, INDIA: Maharashtra: Ahmednagar, 15. x. 1988, on wing, coll. S. M. Kurhade, antenna, legs, wings and genitalia mounted on slides and labelled as above.

Paratypes: 6 males, data same as the holotype.

Comments: This species fits in the genus *Zelomorpha* Ashmead, in the key to the genera of subfamily Agathidinae by Bhat and Gupta (1977) for the Oriental region. In the key to the Oriental species of *Zelomorpha* by Bhat and Gupta (1977), *Zelomorpha guptai* sp. nov. is close to *Zelomorpha punctator* Roman (1913). However, it is distinguished from the same in the characters of: (i) vertex weakly punctate, (ii) flagellum blackish brown, (iii) basal 0.4 of fore wing hyaline, (iv) areola 1.2 x as long as wide, (v) scape 1.5 x as long as wide, (vi) second cubital cell four sided.

The new species superficially resembles with *Zelomorpha fulginosa* Cameron (1899) but differs in the following characters : (i) absence of black dense pubescence on face, (ii) metapleurum closely, moderately punctate, (iii) absence of black dense pubescence on propodeum and (iv) nervulus interstitial.

The name *guptai* is in honour of Dr V.K. Gupta, for his contributations to the taxonomy of Indian Braconidae.

ACKNOWLEDGEMENTS

We thank Prof. S.D. Kalyankar, Head, Department of Zoology, Marathwada University, Aurangabad for providing laboratory facilities. The Senior author wishes to thank Principal K. H. Shitole, New Arts, Commerce and Science College, Ahmednagar for permission to do this study at Marathwada University, Aurangbad.

References

Bhat, S. & V.K. Gupta (1977): Ichneumonologia Orientalis, part VI. The subfamily Agathidinae (Hymenoptera : Braconidae). *Oriental Insects Monograph No. 6.*

Cameron, P. (1899): Hymenoptera Orientalia, part 8. The Hymenoptera of Khasia Hills, First paper. *Mem. Manchester Lit. phil. Soc. 43 (3):* 1 - 220.

Roman, A. (1913): Phillippinische schlupfwespen dus den schwedischen Reichsmuseum, 1. *Ark. Zool. 8 (15):*1-51.

Shenefelt, R.D. (1970): Braconidae 1, Hymenopterorum catalogus, part 4, Junk, The Hague.

NEW RECORDS OF TWO PULMONATE FRESHWATER GASTROPODS IN INDIA, WITH DESCRIPTION OF A NEW SPECIES, *BULINUS INDICUS* [1]

N.V. Subba Rao[2], S.C. Mitra[2], B.D. Parashar[3]
G.P. Gupta[3] and K.M Rao[3]

(With six text-figures)

Introduction

Pulmonate snails of India are classified into four families namely, Lymnaeidae, Ancylidae, Planorbidae and Physidae. The last mentioned family is hitherto represented in India by fossils. Among the other three families, Lymnaeidae and Planorbidae are common and their representatives occur attached to vegetation, submerged objects in lentic waters. The Indian reprsentatives of the family Planorbidae are grouped under three subfamilies, namely Bulininae, Planorbinae and Segmentininae. The first mentioned includes two genera, the most common *Indoplanorbis* and the less common *Camptoceras* (Subba Rao 1989).

A small collection of aquatic molluscs from near Pune has turned out to be interesting and significant, as it adds a species new to India. *Bulinus prinsepii* (*Physa prinsepii*) was recorded from the Intertrappean beds of Deccan (Pascoe 1962). *Physa acuta*, a recent species was recorded from Pakistan. The occurrence of this species is reported for the first time from India.

The subfamily Bulininae is represented by four species in India (Subba Rao 1989). The genus *Bulinus* which is common and represented by several species in Africa is recorded for the first time in India. Several taxonomic investigations were carried out on the genus *Bulinus*. We do not have live material to study the anatomy but the shells are so distinct and different from other known species of the genus that we are inclined to identify the present material as a new species, *Bulinus indicus*. Thus both the species and genera are taxonomically important and are new records for India.

The occurrence of these two species in India has to be viewed with concern since both species have potentialities to act as intermediate hosts of schistosomes.

The species of *Bulinus* are known to be the intermediate hosts of blood flukes, specifically *Schistosoma haematobium*, *S. intercalatum*, *S. bovis* and *S. leiperi* infecting humans, cattle, sheep, goats, and equines (Malek and Cheng 1974). As reports of widespread, although localised, infection of *S. haematobium* among humans causing urinary schistosomiasis in

[1]Accepted October 1993.

[2]Zoological Survey of India, 'M' Block, New Alipore, Calcutta.

[3]Defence Research & Development Establishment, Tansen Road, Gwalior, M.P.